

What is claimed is:

1. An interface assembly adapted for coupling a support member of a component to an engagement member of a floor assembly, the interface assembly comprising:

5 a base engageable with a first surface of the engagement member, the base having at least one clamp arm projecting outwardly therefrom, each clamp arm being adapted to be disposed through an associated coupling aperture disposed in the engagement member and to be engaged with a second surface of the engagement member, the clamp arm being moveable relative to the engagement member between an unsecured position in which the clamp arm is
10 extractable from the coupling aperture and a secured position wherein the clamp arm is not extractable from the coupling aperture;

a support arm coupled to the base and adapted to be coupled to the support member of the component; and

at least one lug member operatively coupled to the base and moveable between a first
15 position wherein the clamp arm is positioned in the unsecured position, and a second position wherein the clamp arm is positioned in the secured position.

2. The interface assembly of Claim 1, wherein each clamp arm includes a primary member adapted to project through the associated coupling aperture, and a finger
20 projecting outwardly from the primary member and adapted to engage with the second surface.

3. The interface assembly of Claim 2, wherein the fingers of the clamp arms project toward each other and are adapted to clampably engage a portion of the engagement
25 member situated between the coupling apertures.

4. The interface assembly of Claim 1, wherein a longitudinal axis of the lug member is disposed approximately parallel with the first surface of the engagement member, and wherein the lug member is rotated to move the clamp arms from the unsecured position into the secured position.

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5. The interface assembly of Claim 2, wherein the fingers of the clamp arms project in the same direction.

6. The interface assembly of Claim 1, wherein a longitudinal axis of the lug member is disposed approximately perpendicular with the first surface of the engagement member, and wherein in the second position, the lug member is inserted into an intermediate coupling aperture disposed in the engagement member between or in the same associated coupling apertures.

7. The interface assembly of Claim 2, wherein the fingers of the clamp arms project in opposite directions away from each other.

8. The interface assembly of Claim 7, wherein the base includes a first portion having a first clamp arm projecting therefrom, and a second portion having a second clamp arm projecting therefrom, the first portion being pivotably coupled to the second portion, the clamp arms being moved from the unsecured position to the secured position by pivoting the first portion relative to the second portion.

9. The interface assembly of Claim 1, wherein the at least one lug member comprises a first lug member engaged into a first lug channel disposed in the first portion, further comprising a second lug member engaged into a second lug channel disposed in the second portion, and wherein in the second position, the first lug member is threadedly

engaged into the second portion and the second lug member is threadedly engaged into the first portion.

10. The interface assembly of claim 1, wherein the base is fixably engaged with the engagement member when the base is intended to carry shear loads, and is moveably engaged with the engagement member when the base is intended to not carry shear loads.

11. An assembly, comprising:

a component having at least one support member;

10 a floor assembly including at least one floor panel and an elongated support having at least one support surface engaged with the floor panel, the elongated support further having an engagement member having a plurality of coupling apertures disposed therein; and

an interface assembly including:

15 a base engaged with a first surface of the engagement member, the base having a pair of clamp arms projecting outwardly therefrom, each clamp arm being disposed through an associated one of the coupling apertures and engaged with a second surface of the engagement member, the clamp arms being moveable relative to the engagement member between an unsecured position in which the clamp arms are extractable from the coupling apertures, and a secured position wherein the clamp arms are not extractable from the coupling apertures;

20 a support arm coupled to the base and coupled to the support member of the component; and

25 at least one lug member operatively coupled to the base and moveable between a first position wherein the clamp arms are positioned in the unsecured position, and a second position wherein the clamp arms are positioned in the secured position.

12. The assembly of Claim 11, wherein each clamp arm includes a primary member that projects through the associated one of the coupling apertures, and a finger projecting outwardly from the primary member and engaged with the second surface.

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13. The assembly of Claim 12, wherein the fingers of the clamp arms project toward each other, and wherein in the secured position, the fingers clampably engage a portion of the engagement member situated between the coupling apertures.

10 14. The assembly of Claim 12, wherein the fingers of the clamp arms project in the same direction.

15 15. The assembly of Claim 14, wherein a longitudinal axis of the lug member is disposed approximately perpendicular with the first surface of the engagement member, and wherein in the second position, the lug member is inserted into an intermediate coupling aperture disposed in the engagement member between the associated coupling apertures.

16. The assembly of Claim 12, wherein the fingers of the clamp arms project in opposite directions away from each other.

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17. The assembly of Claim 16, wherein the base includes a first portion having a first clamp arm projecting therefrom, and a second portion having a second clamp arm projecting therefrom, the first portion being pivotably coupled to the second portion, the clamp arms being moved from the unsecured position to the secured position by pivoting the first portion relative to the second portion.

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18. An aircraft, comprising:

a fuselage operatively coupled to an airframe;

a propulsion system operatively coupled to the airframe;

a floor assembly disposed within and coupled to the fuselage, the floor assembly

5 including at least one floor panel and an elongated support having a support surface engaged with the floor panel, the elongated support further including an engagement member having a plurality of coupling apertures disposed therein;

a component disposed within the fuselage and having a support member positioned proximate the floor assembly; and

10 an interface assembly including:

a base engaged with a first surface of the engagement member, the base having a pair of clamp arms projecting outwardly therefrom, each clamp arm being disposed through an associated one of the coupling apertures and engaged with a second surface of the engagement member, the clamp arms being moveable relative to the engagement member between an unsecured position in which the clamp arms are extractable from the coupling apertures, and a secured position wherein the clamp arms are not extractable from the coupling apertures;

a support arm coupled to the base and coupled to the support member of the component; and

20 at least one lug member operatively coupled to the base and moveable between a first position wherein the clamp arms are positioned in the unsecured position, and a second position wherein the clamp arms are positioned in the secured position.

25 19. The aircraft of Claim 18, wherein each clamp arm includes a primary member that projects through the associated one of the coupling apertures, and a finger projecting outwardly from the primary member and engaged with the second surface.

20. The aircraft of Claim 19, wherein the fingers of the clamp arms project toward each other, and wherein in the secured position, the fingers clampably engage a portion of the engagement member situated between the coupling apertures.

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21. The aircraft of Claim 19, wherein the fingers of the clamp arms project in the same direction.

22. The aircraft of Claim 21, wherein a longitudinal axis of the lug member is disposed approximately perpendicular with the first surface of the engagement member, and wherein in the second position, the lug member is inserted into an intermediate coupling aperture disposed in the engagement member between the associated coupling apertures.

23. The aircraft of Claim 19, wherein the fingers of the clamp arms project in opposite directions away from each other.

24. The aircraft of Claim 23, wherein the base includes a first portion having a first clamp arm projecting therefrom, and a second portion having a second clamp arm projecting therefrom, the first portion being pivotably coupled to the second portion, the clamp arms being moved from the unsecured position to the secured position by pivoting the first portion relative to the second portion.

25. The aircraft of Claim 18, wherein the component includes at least one of a seat member, a galley, a lavatory, a fireplace, a shelf, a bed, an article of furniture, a cargo container, and a partition.

26. A seat track adapted for use with an interface assembly, the seat track comprising:

at least one elongated support; and

an engagement member coupled to the elongated support and having a plurality of
5 coupling apertures disposed therethrough, each coupling aperture being adapted to receive at least one of a clamp arm and a fastener of the interface assembly and further adapted to be engaged with the at least one of the clamp arm and the fastener in an unsecured position wherein the clamp arm is extractable from the coupling aperture, and in a secured position wherein the clamp arm is not extractable from the coupling aperture.

10 27. The seat track of Claim 26, wherein the at least one elongated support includes:

a first channel member having a first upper surface located between or over structure that takes the form of one or more "C"-shaped members, "J"-shaped members, "I"-shaped
15 members, hat shaped members, box shaped members, or other structural members.

28. The seat track of Claim 26, wherein the at least one elongated support includes a raised plateau portion centrally disposed between a pair of outwardly-extending flange portions, the raised plateau portion being coupled to the engagement member.

20 29. The seat track of Claim 26, wherein at least one of the coupling apertures includes an enlarged first portion and at least one relatively smaller end portion.

30. An assembly, comprising:

25 a component having at least one support member;
an interface assembly coupled to the support member;

a floor assembly including at least one floor panel and at least one seat track, wherein the seat track includes:

at least one elongated support; and

an engagement member coupled to the elongated support and having a plurality of coupling apertures disposed therethrough, each coupling aperture being adapted to receive at least one of a clamp arm and a fastener of the interface assembly and further adapted to be engaged with the at least one of the clamp arm and the fastener in an unsecured position wherein the clamp arm is extractable from the coupling aperture, and in a secured position wherein the clamp arm is not extractable from the coupling aperture.

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31. The assembly of Claim 30, wherein the at least one elongated support includes:

a first channel member having a first upper surface;

a second channel member approximately parallel to and spaced apart from the first channel member, the second channel member having a second upper surface approximately co-planar with the first upper surface; and

wherein the engagement member is coupled between the first and second channel members proximate the first and second upper surfaces.

32. The assembly of Claim 30, wherein the at least one elongated support includes a raised plateau portion centrally disposed between a pair of outwardly-extending flange portions, the raised plateau portion being coupled to the engagement member.

33. The assembly of Claim 30, wherein at least one of the coupling apertures includes an enlarged first portion and at least one relatively smaller end portion.

34. The assembly of Claim 30, wherein the interface assembly includes:

5 a base engaged with a first surface of the engagement member, the base having a pair of clamp arms projecting outwardly therefrom, each clamp arm being disposed through an associated one of the coupling apertures and engaged with a second surface of the engagement member, the clamp arms being moveable relative to the engagement member between an unsecured position in which the clamp arms are extractable from the coupling apertures, and a secured position wherein the clamp arms are not extractable from the coupling apertures;

10 a support arm coupled to the base and coupled to the support member of the component; and

at least one lug member operatively coupled to the base and moveable between a first position wherein the clamp arms are positioned in the unsecured position, and a second position wherein the clamp arms are positioned in the secured position.

35. An aircraft, comprising:

a fuselage operatively coupled to an airframe;

a propulsion system operatively coupled to the airframe;

20 a component having at least one support member;

an interface assembly coupled to the support member;

a floor assembly including at least one floor panel and at least one seat track, wherein the seat track includes:

at least one elongated support; and

25 an engagement member coupled to the elongated support and having a plurality of coupling apertures disposed therethrough, each coupling aperture being adapted to receive a clamp arm of the interface assembly and further adapted to be engaged with the clamp arm in

an unsecured position wherein the clamp arm is extractable from the coupling aperture, and in a secured position wherein the clamp arm is not extractable from the coupling aperture.

36. The aircraft of Claim 35, wherein the at least one elongated support includes:
5 a first channel member having a first upper surface;
a second channel member approximately parallel to and spaced apart from the first channel member, the second channel member having a second upper surface approximately co-planar with the first upper surface; and
wherein the engagement member is coupled between the first and second channel
10 members proximate the first and second upper surfaces.

37. The aircraft of Claim 35, wherein the at least one elongated support includes a raised plateau portion centrally disposed between a pair of outwardly-extending flange portions, the raised plateau portion being coupled to the engagement member.
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38. The aircraft of Claim 35, wherein at least one of the coupling apertures includes an enlarged first portion and at least one relatively smaller end portion.

39. The aircraft of Claim 35, wherein the interface assembly includes:
20 a base engaged with a first surface of the engagement member, the base having a pair of clamp arms projecting outwardly therefrom, each clamp arm being disposed through an associated one of the coupling apertures and engaged with a second surface of the engagement member, the clamp arms being moveable relative to the engagement member between an unsecured position in which the clamp arms
25 are extractable from the coupling apertures, and a secured position wherein the clamp arms are not extractable from the coupling apertures;

a support arm coupled to the base and coupled to the support member of the component; and

at least one lug member operatively coupled to the base and moveable between a first position wherein the clamp arms are positioned in the unsecured position, and a second position wherein the clamp arms are positioned in the secured position.

40. The aircraft of Claim 35, wherein the component includes a seat member.

41. The aircraft of Claim 35, wherein the component includes a partition.

42. A method of securing a component having a support member, comprising:
providing an elongated engagement member having a plurality of coupling apertures disposed therein;

coupling a support arm of an interface assembly to the support member of the component; and

operatively positioning a pair of clamp arms of the interface assembly into an associated pair of coupling apertures of the engagement member in a first position wherein the clamp arms are extractable from the coupling apertures; and

engaging the clamp arms of the interface assembly into a second position wherein the clamp arms are not extractable from the coupling apertures.

43. The method of Claim 42, wherein providing an elongated engagement member includes providing an elongated engagement member comprising:
a first channel member having a first upper surface;

a second channel member approximately parallel to and spaced apart from the first channel member, the second channel member having a second upper surface approximately co-planar with the first upper surface; and

an engagement plate coupled between the first and second channel members
5 proximate the first and second upper surfaces, the plurality of coupling apertures being disposed in the engagement plate.

44. The method of Claim 42, wherein providing an elongated engagement member includes providing an elongated engagement member having a raised plateau
10 portion centrally disposed between a pair of outwardly-extending flange portions, the plurality of coupling apertures being disposed in the raised plateau portion.

45. The method of Claim 42, wherein engaging the clamp arms of the interface assembly into a second position includes moving the clamp arms toward each other to
15 clampably engage a portion of the engagement member disposed between the coupling apertures.

46. The method of Claim 45, wherein moving the clamp arms toward each other includes rotating a threaded member to move the clamp arms toward each other.
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47. The method of Claim 42, wherein engaging the clamp arms of the interface assembly into a second position includes moving the clamp arms in the same direction to clampably engage an outer portion of the coupling apertures.

25 48. The method of Claim 47, further comprising inserting a lug member into an intermediate coupling aperture disposed in the engagement member at or between the associated coupling apertures.

49. The method of Claim 42, wherein engaging the clamp arms of the interface assembly into a second position includes moving the clamp arms in opposite directions away from each other to clampably engage outer portions of the coupling apertures.

5 50. The method of Claim 49, wherein the clamp arms comprise first and second clamp arms, and wherein moving the clamp arms in opposite directions away from each other includes pivoting a first portion of the interface assembly that includes the first clamp arm with respect to a second portion of the interface assembly that includes the second clamp arm.

10 51. The method of Claim 49, wherein the interface assembly includes a first portion having a first clamp arm projecting therefrom, and a second portion pivotably coupled to the first portion and having a second clamp arm projecting therefrom, and wherein engaging the clamp arms of the interface assembly into a second position includes pivotably
15 moving the first portion relative to the second portion.

52. The method of Claim 49, wherein coupling a support arm of an interface assembly to the support member of the component includes coupling a support arm of an interface assembly to the support member of at least one of a seat member, a galley, a
20 lavatory, a fireplace, a shelf, a bed, an article of furniture, a cargo container, and a partition.